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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/708,331	02/24/2004	Chin-Kun Hsieh	ADTP0071USA	2330

27765 7590 02/17/2006

NORTH AMERICA INTELLECTUAL PROPERTY CORPORATION
P.O. BOX 506
MERRIFIELD, VA 22116

EXAMINER	
CRANSON JR, JAMES W	

ART UNIT	PAPER NUMBER
2875	

DATE MAILED: 02/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/708,331	HSIEH ET AL.
	Examiner	Art Unit
	James W. Cranson	2875

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *amendment filed 12/13/2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claims 1 – 3, 6, 7, 13, 16, and 17 are rejected under 35 U.S.C. 102(e) as being anticipated by JP 08136918 A to Kobayashi et al.

Kobayashi discloses a backlight unit with a heat pipe for a heat transfer interface.

Regarding claims 1 and 13:

A backlight unit comprising (drawing 1): a light source generator (5) positioned in

backside of a display panel for providing light beams to the display panel; a diffuser (3) positioned between the light source generator and the display panel for uniformly scattering light beams from the light source generator to the display panel; and a housing (7) enclosing the light source generator and connecting to the diffuser (fig 1) for reflecting the light beams to the diffuser, housing further comprising a heat pipe (6) for being a heat transfer interface between the back light unit and an external environment (abstract)

Regarding claim 2, according to claim 1:

Kobayashi discloses that the heat pipe is composed of metallic materials [0015, translation].

Regarding claim 3, according to claim 1:

Kobayashi discloses that the heat pipe is made of copper [0015, translation].

Regarding claims 6, according to claim 1, and claim 16, according to claim 13:

Kobayashi discloses and illustrates that the heat pipe is connected to external environment through a radiator piece (drawing 2).

Regarding claims 7, according to claim 1, and claim 17, according to claim 13:

Kobayashi discloses and illustrates that the heat pipe is positioned at a contact point of the diffuser and an upside of the housing (drawing 1).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Regarding claims 4 and 5, both according to claim 1, and claims 14 and 15, both according to claim 13:

Claims 4, 5, 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 08136918 to Kobayashi in view of USPN 6,515,857 to Ford et al. Kobayashi does not disclose the details of the heat pipe. Ford in a visual heat sink for electronic components teaches that heat sinks may consist of one or more sealed tubes of various cross sections containing a fluid mixture or solution. It would have been obvious to one of ordinary skill in the art at the time of invention to have provided Kobayashi with a solid heat-conductive pipe or a hollow heat-conductive pipe containing a cooling liquid as taught by Ford. The reason is that it is well known in the illumination art to interchange the various passive cooling devices such as various types of heat pipes or other components designed to transfer heat from a device to its surroundings.

Regarding claim 8, according to claim 1:

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP 08136918 to Kobayashi in view of US 2003/00503007 to Higashi. Kobayashi does not disclose that the light source is a fluorescent tube. Higashi in a backlight unit and LCD display teaches using a fluorescent tube as a light source. It would have been obvious to one of ordinary skill in the art at the time of invention to have provided Kobayashi with a fluorescent tube as a light source as taught by Higashi. The reason is that it is well known in the illumination art to interchange cold cathode light sources with fluorescent light sources.

Regarding claim 12, according to claim 1:

Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP 08136918 to Kobayashi in view of US 2004/0239829 to Yu et al. Kobayashi does nót disclose a diffusion sheet or a prism sheet positioned on the diffuser. Yu in a vertical-type backlight unit teaches the use of a prism sheet or a diffusing sheet on top of a diffusing plate 51. It would have been obvious to one of ordinary skill in the art at the time of invention to have provided Kobayashi with a prism sheet or a diffusing sheet on top of a diffusing plate as taught by Yu. The reason, as stated by Yu, is to scatter the light beams uniformly.

Regarding claim 19:

Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP 08136918 to Kobayashi. Kobayashi discloses the claimed invention except that the heat pipe does not have a rough surface. It would have been obvious to one of ordinary skill in the art at the time of invention to have provided Kobayashi with a heat pipe with a rough surface because it has been held that lacking any criticality, changing the form or shape of prior art parts does not make the claimed invention patentable over that prior art. **(*In re Dailey*, 149 USPQ 47).**

Claims 9, 10 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 08136918 to Kobayashi in view of US 2003/00503007 to Higashi and in further view Kobayashi (English translation document). Kobayashi (JP 08136918) does not disclose a radiation reflector layer that is contained on the surface of the heat pipe but does disclose that the heat pipe is considered to be positioned directly below the fluorescent tube or light source generator when the back light is upright against an upright display with the light source and heat pipe with the light source and heat pipe positioned on the lower end of the back light. However, Kobayashi (English translation document) discloses that the heat pipe (6) comprises copper material (paragraph 0015) for the purpose of conducting heat. It is commonly known to one of ordinary skill in the art that copper has a surface layer with reflective properties. It would have been obvious to one of ordinary skill in the art at the time of invention to provide that the heat pipe in the back light unit of JP 08136918 to Kobayashi is made of a copper material as taught by Kobayashi (English translation document) in order to conduct heat away from the adjacent light generator and also reflect light beams from the light generator increasing the light efficiency of the back light unit while cooling the light generator.

Claims 11 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 08136918 to Kobayashi in view of USPN 4,729,076 to Masami et al. Kobayashi (JP 08136918) does not disclose that a contract surface of the heat pipe and the external environment is a rough surface, the rough surface comprising a plurality of sharp teeth so that a radiating area is increased. Masami teaches a plurality of sharp teeth (4,figure 5(F)). It would have been obvious to one of ordinary skill in the art at the time of invention to provide that a contract surface of the

heat pipe and the external environment is a rough surface, the rough surface comprising a plurality of sharp teeth so that a radiating area is increased in Kobayashi (JP 08136918) as taught by Masami.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure is US 2002/0113919 to Liu et al.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James W. Cranson whose telephone number is 571-272-2368. The examiner can normally be reached on Mon-Fri 8:30A.M.- 5:00P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sandy O'Shea can be reached on 571-272-2378. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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ALAN CARIASO
PRIMARY EXAMINER